

ABSTRACT OF THE DISCLOSURE

Genes and the proteins encoded thereby that are involved in stroke response and/or are regulated by FK506 are disclosed. These genes were discovered using *in vivo* or *in vitro* stroke models by determining which genes were differentially upregulated or downregulated upon treatment of the model with FK506. They were also found by a functional assay of genes specifically selected for conferring to cells resistance to hypoxia, dopamine or glutamate treatment. The disclosure includes such genes and proteins as well as analogs, salts and functional derivatives of such proteins, and DNA encoding such analogs, and methods of use. Methods for treating the effects of stroke, hypoxia and/or ischemia by regulating such genes or proteins are disclosed. Methods for screening for compounds capable of regulating the genes and proteins of the invention are also disclosed.